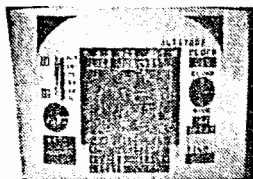
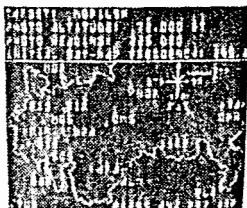




TOM MIX SOFTWARE

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GRAND RAPIDS, MI 49506

SR-71



SR-71 is a fast action game in which you are the pilot on a mission to take photographs of missile sites in Russia and deliver them to our processing laboratory in Japan.

32K EXTENDED BASIC

LOADING INSTRUCTIONS:

Tape - CLOADM (Program will auto execute)

Disk - LOAD"SR71" & run)

MISSION BRIEFING:

Mission: To photograph a location in the U.S.S.R., to be revealed to the pilot once he is airborne. The flight will launch from a military airbase in TURKEY and MUST terminate in JAPAN. The reasons for this are political and are of no concern to the pilot, save that should he elect to return to Turkish airspace, the mission will be considered ABORTED. This flight has been made necessary by the failure of our polar-orbit reconnaissance satellite. It is vital that the high-resolution photographic information gained is delivered to our processing laboratory at our military airbase in Japan.

Intelligence: Our best estimates are that the enemy has concentrated his Surface-to-Air Missile (SAM) installations in an arc guarding the Southern periphery of the country. There are 3 types of SAMs currently in use in the target country:

SAM-5, a relatively slow, heat-seeking missile. This missile is best defeated by ejecting a magnesium parachute flare. The intense heat generated by the flare will attract the missile, provided the afterburners of your aircraft are not engaged. It is quite possible this system has been upgraded to ignore high-intensity heat sources unless there are no others around. Be prepared to reduce throttle settings even further, if necessary.

SAM-7, a ground guided intercept missile, very easy to jam. This missile has a somewhat greater speed and range than the SAM-5. Effective radius for electronic jamming is estimated to be 200 miles.

SAM-9, the latest Soviet development in common use, this deadly missile is thought to "home in" on the very jamming which defeats the SAM-7. In addition, this weapon is extremely fast, having a top speed of well over 3,000 miles per hour. The best defense against this system is the "Quail" decoy missile, which simulates a much larger aircraft on the enemy's radar. We estimate that a SAM-9 will achieve target-lock on the Decoy about 80% of the time.

Conservative estimates give each enemy missile complex, and its associated launch sites an effective defense radius of over 600 miles. The closer an aircraft approaches the center of the zone, the more likely it is to draw hostile fire.

You may open your sealed target instructions once you are airborne. We have installed an abort command on the console, should you desire to discontinue the mission. Enter "Q" for Quit.

COCKPIT PANEL:

Centered on the panel is the Flight Director. At the top are the Airspeed Indicator, the Compass, and the Altimeter. The Airspeed is in miles per hour, the Heading is in Degrees (True), and the Altitude is in feet. At

the bottom of the panel are the annunciator lights for Radar, Auto-pilot, and Camera systems; these will reverse color when those systems are toggled on/off.

Centered in the Flight Director is the Artificial Horizon, the primary reference instrument for flight. The colored line represents the horizon. By referring to the "wings" in the center of the instrument, the pilot can determine the altitude of the aircraft. In addition, the "roll bug", the "plus" on the bottom arc of the circle, will indicate the amount and direction of roll. Each of the divisions on the circle is 15 degrees.

FLIGHT CONTROL:

Pitch and roll changes are input through the cockpit Joystick, forward to put the nose down, back to pull the nose up, left to roll left, right to roll right. It is important to note that, unlike many arcade games, it is impossible to change an aircraft's position instantly. For example, the pilot must pull the stick back to START the nose coming up. Once the nose is above the horizon, the aircraft will begin to climb (provided enough thrust is available vs. air density at a given altitude and aircraft weight).

WARNING: It is possible to "stall" the aircraft; to force the nose to an angle higher than that for which the engines can provide enough thrust and the wings enough lift. In other words, even though the nose is pointed up, the aircraft is losing altitude. If this condition is maintained, the wing will "stall" and the aircraft will enter a terminal spin.

Turns at higher airspeeds require a proportionately larger degree of bank, but because roll in this flight has been limited to 45 degrees, a 2,500 mile per hour turn has a radius of over 90 miles. It is advised that the pilot choose a lower airspeed for turns, or use the Auto-pilot for high-air-speed turns.

THREAT PANEL:

This text display, above the Flight Director, serves as a general information annunciator as well as a warning panel. Messages output to this area will sound a "beep tone" and warnings will sound a modulated tone.

WARNING PANEL:

Just above the Flight Director is the area reserved for inflight warnings:

LOW-FUEL:	advisory
ALTITUDE:	when below 5,000 feet
AIRSPEED:	requires immediate attention to avoid stall-spin. Increase power or decrease pitch (lower the nose of the aircraft).

RADAR SYSTEMS:

This aircraft is equipped with the AWG-9 downlook radar system, which has an airborne range of up to 900 miles, painting only significant ground or airborne targets (filtering out ground clutter).

Radar is toggled on/off by pressing the "R" key on the control console. As with all systems activated by a keypress, a "beep tone" will advise of positive computer input, with cockpit display coming up within 2 seconds.

The range markers will replace the Artificial Horizon wings and roll circle when the system is on line. Be advised that the range markers should be used for estimation purposes only, but will still be quite useful in figuring range to a target. When not in the Auto mode, the "roll bug" and Horizon Line will also be presented on your Radar Display. These will prove helpful in maneuvering when in Radar mode. Remember, the Horizon Line is just that...the HORIZON, not your wings. There may be a tendency to roll in the wrong direction when coming out of a turn.

Range is initialized at 200 miles but may be changed, in units of 100, to the desired value by pressing a single digit (1 through 9, to select 100 through 900 miles) on your command console. The "beep tone" will advise of input and the next screen update will show the selected range.

When in the Auto-pilot mode and Radar is engaged, the clock is speeded up to ONE MINUTE per screen update. Thus a long leg of your flight plan may be made to pass very quickly. When an enemy missile first approaches within 200 miles, the range is automatically set to 200 miles if a greater range had been selected and radar engaged.

This Radar system is very combat-reliable, taking a close miss by enemy fire to disable its circuitry.

AUTO-PILOT:

The onboard Auto-pilot gives the pilot the capability of allowing the computer to take over on long legs of the flight plan by updating your position and mission clock in larger than real-time increments. Toggle on/off with "A".

When in Flight-director (standard) mode, the Auto-pilot advances position and clock by 10 seconds each screen update cycle. If Radar is engaged, the clock and position are incremented by 60 seconds. If systems detect a SAM launch, the Auto-pilot will disengage to allow the pilot time to plan his defense against the threat. The Auto-pilot may be re-engaged until the threat is within 200 miles at which time flight will revert to manual control.

Another good use of the Auto-pilot mode is to accomplish a turn at high airspeeds in accelerated real-time. Put the aircraft into a gentle roll (less than 15 degrees of bank) and activate Auto-pilot, disengaging a degree or two in advance of the desired heading.

WARNING: Do not engage the Auto-pilot when in a bank of greater than 15 degrees or when in any bank at altitude with Radar activated. The result will be a rapid turn around a point (a circle) and will confuse most experienced pilots.

Use the Auto-pilot to climb or descend by setting up the pitch desired and engaging Auto-pilot. Note that in your initial climb-out that your airspeed increases with altitude and fuel consumed.

THROTTLE:

Power is provided by two Pratt & Whitney JT11D-20b (J58) turbo-ramjet engines, each rated at 23,000 lbs. of thrust at sea level, 32,500 lbs. with afterburner. Maximum fuel consumption is 4,000 gallons per hour, per engine.

Thrust is selected by console Throttle keys, up and down arrows. These control the power setting for both engines (or for a single engine should either engine fail). The current Throttle setting is displayed on a columnar scale in the upper left of the cockpit panel.

By pressing either arrow key, thrust can be changed by approximately 2.5%. Throttle adjustments may be made in increments (or decrements) of 25% by holding down the SHIFT key and then pressing the desired arrow. Any throttle selection above 100% will automatically engage full afterburners. The Throttle controls are very useful for "trimming" altitude. Maneuver the aircraft to an altitude just above the desired height and set the controls for straight and level flight. Then slowly reduce the throttle settings until you have selected a power setting just below that required to maintain level flight. The altimeter will register a slow (depending upon the power setting) descent which can be halted by bringing in more power, leveling the aircraft off at the desired altitude.

Should an engine shut-down (flameout) occur due to fuel mismanagement or battle damage, the ramjet design of these engines requires atmospheric densities below 30,000 feet for an airstart. To accomplish an airstart of a failed engine, airspeeds exceeding 500 f.p.s. (340 m.p.h.) and throttle settings between 70% and 80% are recommended.

FUEL GAUGE:

Fuel aboard is accurately displayed on a circular dial at the left center of the cockpit panel. The Fuel Gauge needle turns in a counter-clockwise direction, with the 3 o'clock position being EMPTY.

The mission is started with 15,376 gallons of JP-7 fuel aboard, almost 100,000 pounds, bringing take-off weight to 160,000 pounds. Fuel consumption is much less at higher altitudes because of lower air resistance and greater engine efficiency.

MISSION CLOCK:

Located at the upper right of the cockpit panel, the Clock displays real-time minutes and seconds elapsed in the mission. Because some functions require more than one second, you may see your clock advance more than one second per screen update. This is especially evident in the Auto-pilot modes. After 60 minutes is displayed, the Clock will reset to 00:00 and continue counting. The clock is paused during Sat-Nav operations and during Map display.

CLIMB-DIVE INDICATOR:

The Climb-Dive dial is centered on the right of the pilot's cockpit panel. It displays the rate of climb (or descent) in feet per minute. When rates exceed 4,000 f.p.m., the needle will indicate 4,000. Best rate-of-climb is achieved with a positive pitch of 25 degrees.

CAMERA:

The onboard Cameras will provide 20 photographic frames, depletion of each exposure indicated on the linear Film Indicator at the lower right of the cockpit panel. When toggled on/off, with "C", the camera will automatically take one photograph per screen update cycle until all film is exhausted. Each frame of film will record altitude, heading, and distance to target at the time of the exposure.

E.C.M. PANEL:

Electronic Counter-Measures are standard equipment aboard the SR-71. These systems include:

FLARES: Used as a heat source to attract heat-seeking missiles fired at the aircraft. Aircraft has six. Toggle ejection with "F".

DECOYS: Duplicate the echo of the SR-71 on most enemy radar systems. Deployed to attract advanced radar-homing missiles. Your flight has been loaded with four. Launch decoys with "D".

ECM JAMMING: Quite often effective at long range against less sophisticated surface-to-air missiles. Toggle on/off with "E".

For more details, see the pre-flight briefing.

SAT-NAV PANEL:

The Satellite Navigation Panel is a high-security device which provides continuous inertial guidance information to the pilot. Because this system communicates directly with orbiting navigational satellites, a security frequency is assigned at the start of each mission. **WARNING:** The Sat-Nav security frequency is automatically changed after each access. The flashing numbers are your new security frequency. Remember it.

When toggled on, with "S", the system requests input of the proper frequency. Once entered (the system will automatically input the decimal), the Sat-Nav system will request a target. The first 3 letters of any target on the map, including SAM if one is airborne, are required. If an improper target or a null string, "XXX", is entered, the system will assign the closest target (or a SAM if one is airborne) as the requested target. Range, True Bearing, and Relative Bearing (aligned by the clock, 12 o'clock being at the nose of the aircraft, 3 o'clock the right wing, 6 o'clock the tail, and 9 o'clock the left wing), are returned.

After outputting range and bearing information, the unit then flashes the new frequency, awaiting console keypress.

MAP ARRAY:

The electronic map generated by the system microprocessor has several useful features which are selected by a single keypress:

PRESS	RESULT
R	Terminate Map display, return to cockpit.
C	Draw city positions and names on map. If city names are already on the map, then pressing "C" will erase city names.
Z	Display missile zones, those areas where missile intercept is likely.
T	List target information. During preflight briefing only, the Sat-Nav security frequency will be shown.
X	Expands the map by magnifying one quadrant.
M	Re-draws the map in normal scale.
P	Circles current position on map.

The target selected for your mission will have a "squared plus" to mark its position, versus a "plus" for other cities.

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